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UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte SHIGEFUMI SAKAI, ATSUYUKI KIBA,
CHITOSHI SHIGENO and HIDEAKI KUBO

Appeal 2007-1636
Application 09/892,577
Technology Center 1600

Decided: February 13, 2008

Before TONI R. SCHEINER, DEMETRA J. MILLS, and ERIC GRIMES,
Administrative Patent Judges.

GRIMES, *Administrative Patent Judge.*

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 involving claims to a cosmetic composition, which the Examiner has rejected as obvious. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

BACKGROUND

The Specification discloses “a skin cosmetic composition comprising:
(A) a hydrogel particle comprising a non-crosslinked hydrogel containing an

oil component dispersed in (B) an aqueous medium” (Spec. 5). A “non-crosslinked hydrogel” is defined as “a gel comprising water as a dispersion medium, in which the formation of the gel is based upon . . . a heat-reversible sol-gel transformation” (*id.*) The gel can be, for example, agar or gelatin (*id.*). “The term ‘hydrogel particle’ . . . means an approximately spherical particle made of a hydrogel, and does not include a so-called capsule composed of a shell and a core material” (*id.* at 6).

DISCUSSION

1. CLAIMS

Claims 33-49 and 51 are pending and on appeal. Appellants have provided separate arguments for claims 34-36 (as a group) and claim 51. The other claims subject to each rejection will stand or fall together. 37 C.F.R. § 41.37(c)(1)(vii). Claims 33, 34, 44, and 51 are representative and read as follows:

33. A skin cosmetic composition comprising:
hydrogel particles dispersed in an aqueous medium, wherein each of said hydrogel particles comprises a non-crosslinked hydrogel having an oil component dispersed therein, and wherein said aqueous medium has a viscosity of 300 to 5000mPa·s at 25° C and a specific gravity of 0.7 to 2.0, wherein said hydrogel particles are prepared by a process comprising:
providing an emulsion or dispersion of components comprising a non-crosslinked hydrogel-forming polymer, the oil component and water; and
discharging said emulsion or dispersion through an orifice into a cooling oil under conditions sufficient to provide droplets, which are cooled in said cooling oil after formation.

34. The skin cosmetic composition of claim 33, wherein said discharging step is performed simultaneously with application of vibrations.

44. The skin cosmetic composition of claim 33, wherein the oil component comprises a solid fat, and the melting point of the oil component is not less than 35° C.

51. The skin cosmetic composition of claim 33, wherein the hydrogel particles are stably dispersed and suspended in said aqueous medium.

2. OBVIOUSNESS – CLAIMS 33-43, 46-49, AND 51

Claims 33-43, 46-49, and 51 stand rejected under 35 U.S.C. § 103 as obvious in view of Delrieu,¹ Noda,² and Rosenstreich.³ The Examiner relies on Delrieu for teaching hydrogel particles having an oil component dispersed in them (Answer 4). The Examiner finds that Delrieu's particles, although made from a process different from the one recited in claim 33, meet the limitations of the instant claims (*id.* at 3-4). The Examiner also finds that Delrieu teaches that the "resulting agar beads are then incorporated into cosmetic compositions such as creams, gels and lotions (an aqueous composition)" (*id.* at 5).

The Examiner relies on Noda and Rosenstreich for teaching the viscosity and specific gravity recited in claim 33. The Examiner finds that "Noda teaches skin cosmetics such as lotions which contain oily components and emulsifiers enclosed in gelatin microcapsules in the aqueous phase," and that the compositions had a viscosity of 1,000 to 20,000 mPa·s (Answer 6). The Examiner finds that Rosenstreich discloses an antiperspirant lotion

¹ Delrieu et al., U.S. Patent 5,961,990, issued Oct. 5, 1999.

² Noda et al., U.S. Patent 5,089,269, issued Feb. 18, 1992.

³ Rosenstreich et al., U.S. Patent 3,932,609, issued Jan. 13, 1976.

composition having a preferred viscosity of 500 to 2225 mPa·s and a specific gravity of 1.100 to 1.400 (*id.*⁴).

The Examiner concludes that

[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the composition of Delrieu by adjusting the viscosity and specific gravity of the aqueous medium of the composition as motivated by Noda and Rosen[s]treich because 1) Noda teaches the acceptable viscosity range of a cosmetic such as lotion which contains agar beads; and further teaches that adjust[ing] specific gravity of a solution ca[n] improve the dispersity of capsules in the composition; 2) Rosentriech [sic] teach the preferred viscosity and specific gravity for an aqueous lotion composition.

(*Id.* at 7.)

We agree with the Examiner that the cited references support a prima facie case of obviousness. Appellants do not dispute the Examiner's finding that Delrieu's hydrogel particles meet the product-by-process limitation of claim 33 (see, e.g., App. Br. 5). Thus, the only issue is whether the prior art would have suggested a composition containing Delrieu's hydrogel particles and having a viscosity and specific gravity within the ranges recited in claim 33.

Noda discloses cosmetic compositions that comprise microcapsules enclosing a hydrophobic component and that have a viscosity of 1000 to 20,000 cps (Noda, col. 5, ll. 56-62). (Appellants do not dispute the Examiner's position that the "cps" units used in Noda and Rosenstreich are equivalent to the "mPa·s" units used in the instant claims.) Noda teaches

⁴ The Examiner actually states that Rosenstreich teaches a specific gravity of "1.100-1400" but "1400" is a typographical error: the cited passage in Rosenstreich recites a specific gravity range of 1.100 to 1.400.

that the desired viscosity is achieved by addition of a water-soluble polymer to the aqueous phase of the composition and that this range of viscosities provides properties for a composition to be applied to the hands (*id.* at col. 8, ll. 45-66; col. 1, ll. 7-25). Noda provides an exemplary composition comprising microcapsules containing vitamin E, formulated as a “gel-like emulsion having a viscosity of 1500 cps” (*id.* at col. 23, ll. 35-57) and a second exemplary composition comprising microcapsules containing γ -linoleic acid or liquid paraffin, formulated as a “cream having a viscosity of 18000 cps” (col. 23, l. 60 to col. 24, l. 38).

Rosenstreich discloses an antiperspirant lotion (Rosenstreich, col. 2, l. 4) and teaches that the viscosity “should be from about 500 to about 2,225 cps. . . . The antiperspirant lotions having a viscosity of 700 to 1100 cps. are particularly preferred. These particularly preferred antiperspirant lotions are further characterized by a specific gravity of about 1.100 to about 1.400 at ambient temperature” (*id.* at col. 4, ll. 21-28).

We agree with the Examiner that, in view of these disclosures, a person of ordinary skill in the art would have considered it obvious to modify the hydrogel-containing composition taught by Delrieu to have a viscosity between 300 and 5000 cps and a specific gravity between 0.7 and 2.0. Delrieu suggests compositions in the form of a lotion, and Rosenstreich teaches a lotion composition having a viscosity of 700-1100 cps and a specific gravity of 1.100-1.400. Thus, those of ordinary skill in the art would have considered it obvious to formulate Delrieu’s composition to have the viscosity and specific gravity taught by Rosenstreich, in order to give it the characteristics of a lotion.

Noda provides evidence that viscosity is a result-affecting variable in making cosmetic compositions in different forms: Noda characterizes a composition having a viscosity of 1500 cps as “gel-like,” and a composition having a viscosity of 18,000 cps as a “cream.” The instant Specification confirms that the viscosity and specific gravity ranges recited in claim 33 “giv[e] the cosmetic composition flowability especially useful as lotion” (Spec. 19: 14-15).

“‘[I]t is not inventive to discover the optimum or workable ranges by routine experimentation.’ . . . Only if the ‘results of optimizing a variable’ are ‘unexpectedly good’ can a patent be obtained for the claimed critical range.” *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997). Appellants have not provided evidence that the claimed composition is unexpectedly superior to those in the prior art.

Appellants argue that Noda’s composition contains microcapsules, which are excluded from the “hydrogel particles” of the claimed composition by the definition in the instant Specification (App. Br. 6). Appellants argue that Rosenstreich’s composition “bears absolutely no relation to the presently claimed invention, as it contains no hydrogel particles” (*id.* at 7). Appellants conclude that the cited references would not have suggested “selection of these viscosity and specific gravity parameters in combination with the hydrogel particles” (*id.*).

This argument is not persuasive. Appellants have cited no persuasive evidence to show that those skilled in the art would have expected a lotion composition containing hydrogel particles to require different viscosity or specific gravity parameters than other lotion compositions. As discussed

above, the cited references show that compositions vary from a “gel-like emulsion” to a “cream” depending on their viscosity (Noda, col. 23, l. 35 to col. 24, l. 38), and that viscosities and specific gravities within the ranges recited in claim 33 were suitable for a lotion composition (Rosenstreich, col. 4, ll. 21-28). Appellants’ argument that these teachings would not have been recognized as suitable for a composition containing hydrogel particles is unsupported by the evidence and is therefore unpersuasive.

With respect to claims 34-36, Appellants argue that “the Examiner is using impermissible hindsight in attempting to force the ‘agitation of the oil bath’ as disclosed in Delrieu to somehow meet the requirement of the present invention that vibration be applied during the discharging step, particularly when it is applied directly to the (i) orifice, (ii) the dispersion or emulsion itself, or (iii) to the liquid column being discharged from the orifice” (App. Br. 8-9).

Appellants’ argument does not persuade us that the Examiner’s rejection is in error. Claim 34 further limits the process by which the hydrogel particles of the claimed composition are made by requiring “application of vibrations.” As such, it limits the composition only to the extent that the process results in a different product. *In re Thorpe*, 777 F.2d 695, 697 (Fed. Cir. 1985) (“If the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.”).

The instant Specification states that applying vibration results in more uniform particle size (Spec. 16: 4-6).⁵ Delrieu, however, states that the methods disclosed therein “yield a well-focussed size distribution” (col. 5, ll. 53-54). We agree with the Examiner that the prior art product reasonably appears to be the same as the product made by the method of claim 34. Appellants have provided no evidence to the contrary.

Appellants also argue claim 51 separately. Claim 51 is directed to the composition of claim 33, “wherein the hydrogel particles are stably dispersed and suspended in said aqueous medium.” Appellants argue that the Examiner’s reliance on Noda for this limitation is in error:

The Examiner has stated that Noda teaches adjustment of the specific gravity for “improved dispersibility” at column 3, lines 40-45. . . . However, the Examiner is confusing the effect of “improved dispersibility” with providing a “stably dispersed and suspended” particle in an aqueous medium (as required in claim 51). The Examiner must realize that “improved dispersibility” means easier to cause to be dispersed, but does not necessarily result in being “stably dispersed”.

(App. Br. 9.)

As the Specification makes clear, however, it is the viscosity and specific gravity of the aqueous medium that cause the hydrogel particles to be stably dispersed and suspended. See the Specification 19: 5-18 (“The viscosity of the aqueous medium is 300 to 5000 mPa·s . . . from the viewpoints of homogeneous dispersibility. . . . The specific gravity of the aqueous medium is 0.7 to 2.0 . . . from the viewpoints of monodispersibility

⁵ The Specification also states that “production efficiency is improved” when vibrations are applied (Spec. 16: 2-4) but this effect does not appear to produce any structural change in the resulting particles.

of the particles. . . . [T]he particles to be dispersed in the aqueous medium are stably dispersed and suspended in the aqueous medium.”).

Appellants’ arguments confirm this view: “A key feature of the present invention is the combination of the hydrogel particles with an aqueous medium hav[ing] certain viscosity and specific gravity limitations, in order to provide a product in which the hydrogel particles are ‘stably and homogeneously dispersed’ in the aqueous medium” (Reply Br. 3).⁶

The cited references would have suggested a product having a viscosity and specific gravity within the range recited in the claims. Therefore, it is reasonable to conclude that the product suggested by the prior art would meet the “stably dispersed and suspended” limitation of claim 51. Appellants have not provided persuasive evidence to support a contrary conclusion, nor have they shown that any properties of the claimed composition would have been unexpected in light of the prior art of record.

3. OBVIOUSNESS – CLAIMS 44 AND 45

Claims 44 and 45 stand rejected under 35 U.S.C. § 103 as obvious in view of Delrieu, Noda, Rosenstreich, and Tsauro.⁷ We agree with the Examiner’s reasoning (Answer 7-9) and with her conclusion that claims 44 and 45 would have been prima facie obvious to those of ordinary skill in the art.

Appellants argue that “[w]hile it is true that Tsauro discloses solid ceramide as an oil component in the particulates used therein, Tsauro still

⁶ “Reply Br.” refers to the Reply Brief filed Sept. 13, 2006. The “Supplemental Reply Brief” filed October 16, 2006 was untimely and was not considered by the Examiner (see the communication mailed Jan. 9, 2007) or by this panel.

⁷ Tsauro et al., U.S. Patent 5,726,138, issued Mar. 10, 1998.

does not overcome the deficiencies of the combination of Delrieu, Noda and Rosen[s]treich” (App. Br. 10). As discussed above, however, we conclude that Delrieu, Noda, and Rosenstreich support a prima facie case of obviousness. We therefore do not find Appellants’ argument persuasive.

SUMMARY

We affirm the rejection of claims 33-43, 46-49, and 51 under 35 U.S.C. § 103 based on Delrieu, Noda, and Rosenstreich. We also affirm the rejection of claims 44 and 45 under 35 U.S.C. § 103 based on Delrieu, Noda, Rosenstreich, and Tsaur.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

Ssc:

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